Every Species is a Masterpiece

Edward O. Wilson

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Edward O. Wilson (b.1929) is one of the world's pre-eminent biologists and naturalists, whose environmental advocacy and humanist ethics has transformed the study of biodiversity.

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Is Humanity Suicidal?

Imagine that on an icy moon of Jupiter – say, Ganymede – the space station of an alien civilization is concealed. For millions of years its scientists have closely watched Earth. Because their law prevents settlement on a living planet, they have tracked the surface by means of satellites equipped with sophisticated sensors, mapping the spread of large assemblages of organisms, from forests, grasslands, and tundras to coral reefs and the vast planktonic meadows of the sea. They have recorded millennial cycles in the climate, interrupted by the advance and retreat of glaciers and scatter-shot volcanic eruptions.

The watchers have been waiting for what might be called the Moment. When it comes, occupying only a few centuries and thus a mere tick in geological time, the forests shrink back to less than half their original cover. Atmospheric carbon dioxide rises to the highest level in 100,000 years. The ozone layer of the stratosphere thins, and holes open at the poles. Plumes of nitrous oxide and other toxins rise from fires in South America and Africa, settle in the upper troposphere, and drift eastward across the oceans. At night the land surface brightens with millions of pinpoints of light, which coalesce into blazing swaths across Europe, Japan, and eastern North America. A semicircle of fire spreads from gas flares around the Persian Gulf.

It was all but inevitable, the watchers might tell us if we met them, that from the great diversity of large animals, one species or another would eventually gain intelligent control of Earth. That role has fallen to *Homo sapiens*, a primate risen in Africa from a lineage that split away from the chimpanzee line 5 to 8 million years ago. Unlike any creature that lived before, we have become a geophysical force, swiftly changing the atmosphere

and climate as well as the composition of the world's fauna and flora. Now in the midst of a population explosion, the human species has doubled to 5.5 billion during the past 50 years. It is scheduled to double again in the next 50 years. No other single species in evolutionary history has even remotely approached the sheer mass in protoplasm generated by humanity.

Darwin's dice have rolled badly for Earth. It was a misfortune for the living world in particular, many scientists believe, that a carnivorous primate and not some more benign form of animal made the breakthrough. Our species retains hereditary traits that add greatly to our destructive impact. We are tribal and aggressively territorial, intent on private space beyond minimal requirements, and oriented by selfish sexual and reproductive drives. Cooperation beyond the family and tribal levels comes hard.

Worse, our liking for meat causes us to use the sun's energy at low efficiency. It is a general rule of ecology that (very roughly) only about 10 percent of the sun's energy captured by photosynthesis to produce plant tissue is converted into energy in the tissue of herbivores, the animals that eat the plants. Of that amount, 10 percent reaches the tissue of the carnivores feeding on the herbivores. Similarly, only 10 percent is transferred to carnivores. And so on for another step or two. In a wetlands chain that runs from marsh grass to grasshopper to warbler to hawk, the energy captured during green production shrinks a thousandfold.

In other words, it takes a great deal of grass to support a hawk. Human beings, like hawks, are top carnivores, at the end of the food chain whenever they eat meat, two or more links removed from the plants; if chicken, for example, two links; and if tuna, four links. Even with most societies confined today to a largely vegetarian diet, humanity is gobbling up a large part of the rest of the living world. We appropriate between 20 and 40 percent of the sun's energy that would otherwise be fixed into the tissue of natural vegetation, principally by our consumption of crops and timber, construction of buildings and roadways, and creation of wastelands. In the relentless search for more food we have reduced animal life in lakes, rivers, and now, increasingly, the open ocean. And everywhere we pollute the air and water, lower water tables, and extinguish species.